Position versus Time Graph….

DSHS Physical Science

Kinematics:

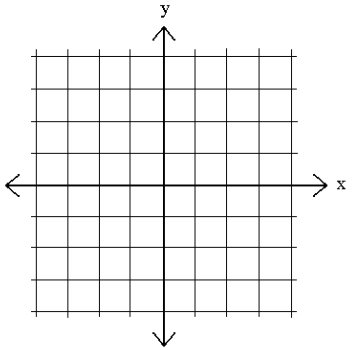
The study of object's motion without looking at the cause. Does not answer HOW motion occurs.

Motion can be depicted using a number line, sketch of a situation or a graph.

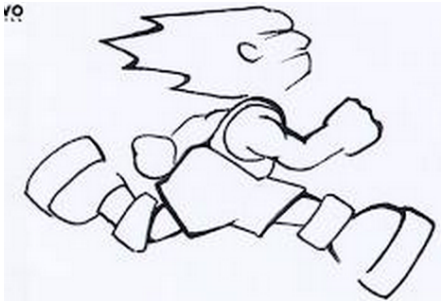
In terms of position:

What does it mean to be at rest?

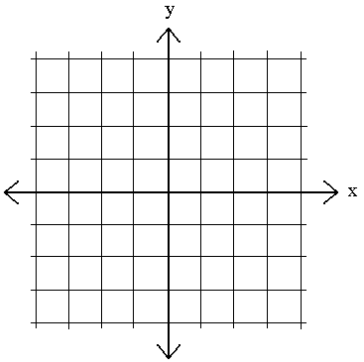
Not to change position over a period of time



What does it mean to be in motion?



To change position over a period of time

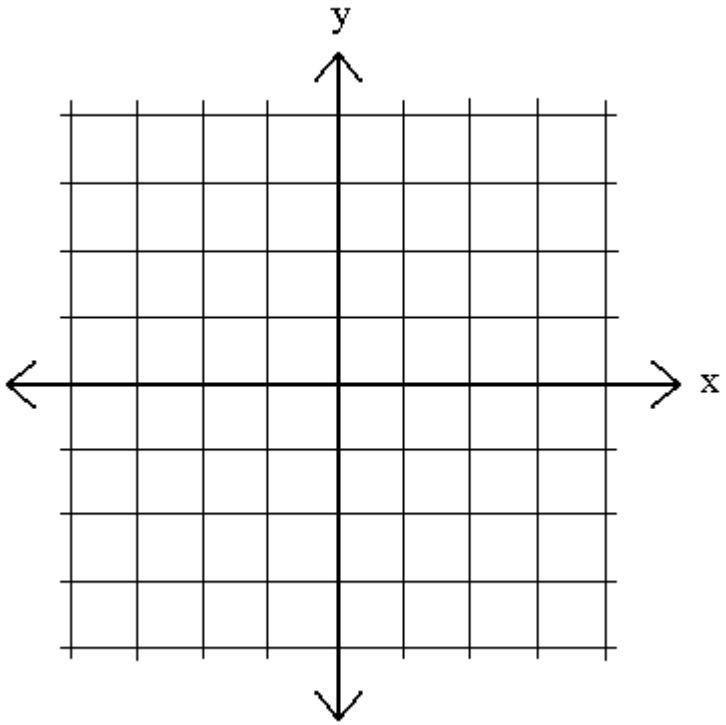


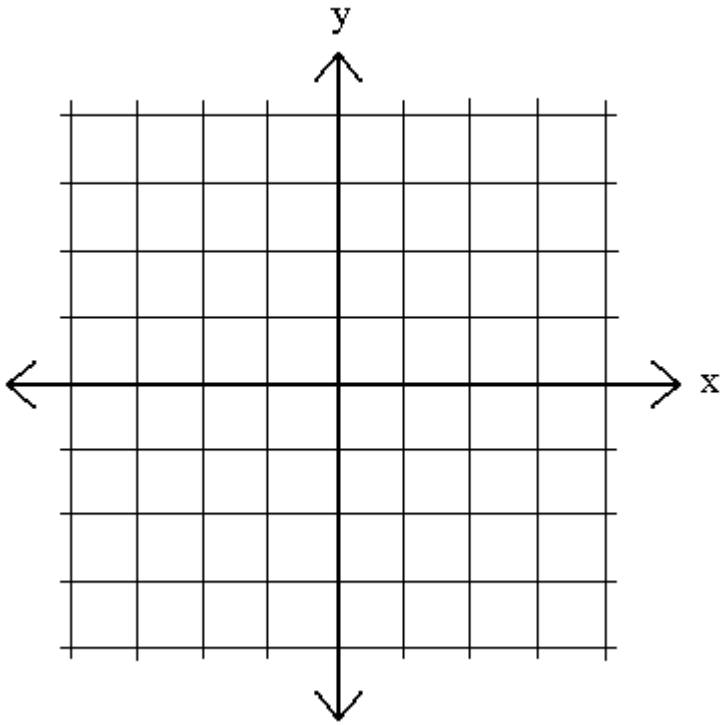
Constant motion or Uniform motion

To be in constant motion or uniform motion means:

The rate that an objects position changes over a period of time is fixed, does not vary or in other words it is unchanging.

A graph of constant motion:





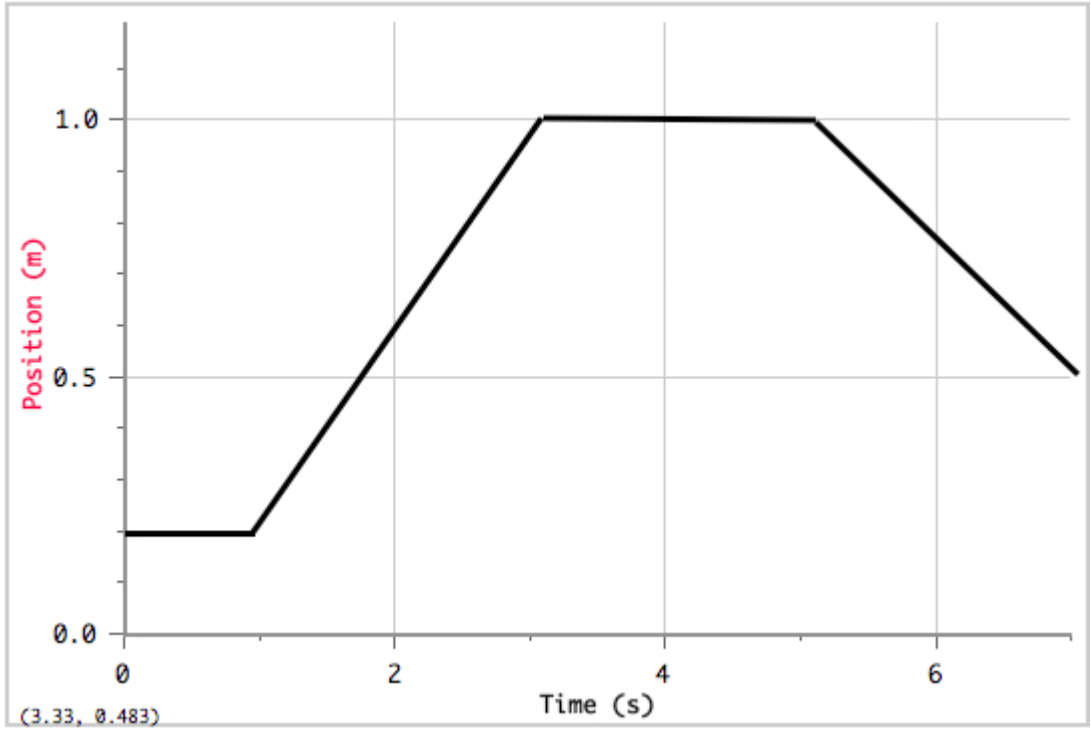
Looking at a graph we can determine the distance and displacement of an object over a period of time.

4. Looking at a graph we can:

A) describe an objects motion

B) determine the distance of an object over a period of time

C) determine the displacement of an object over a period of time



Interpreting the graph

**To describe the objects motion - first break the graph up any time the slope changes

A FLAT LINE means: The object is at rest at the position indicated by the y-axis

A constant POSITIVE slope above the x-axis means: that the object is moving at the same rate away from the origin

A constant NEGATIVE slope above the x-axis means: that the object is moving at the same rate towards the origin

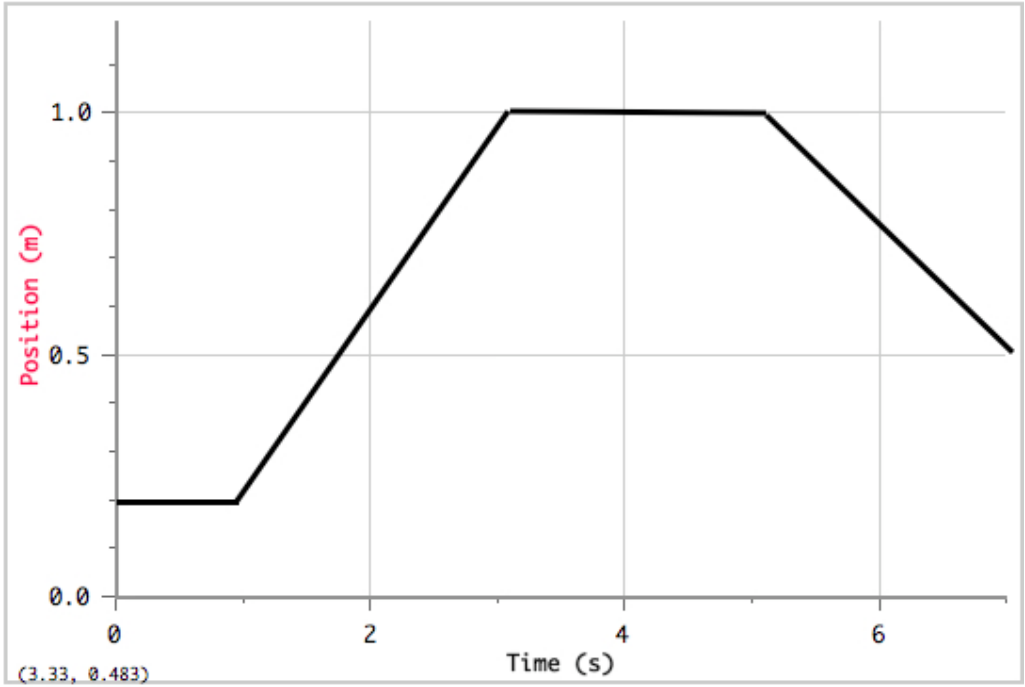
Steep vs shallow: a steeper slope means that the object is moving at a faster rate

steep = fast

shallow = slow

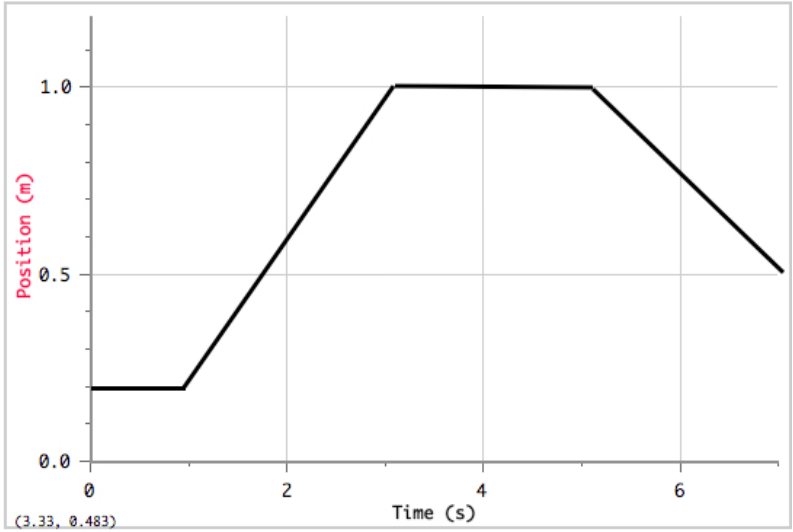
Describing the motion:

**To describe the objects motion - first break the graph up any time the slope changes



Calculating the distance and displacement

Distance:



Displacement:

Given	Equation	Work	Answer

Try one on your own:

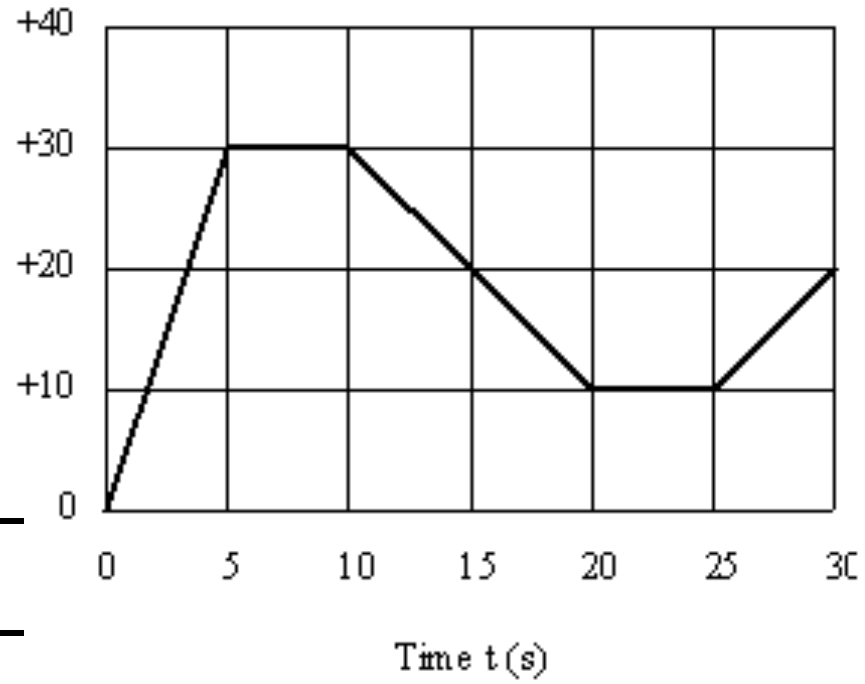
Description of motion: _____

_____

_____

_____

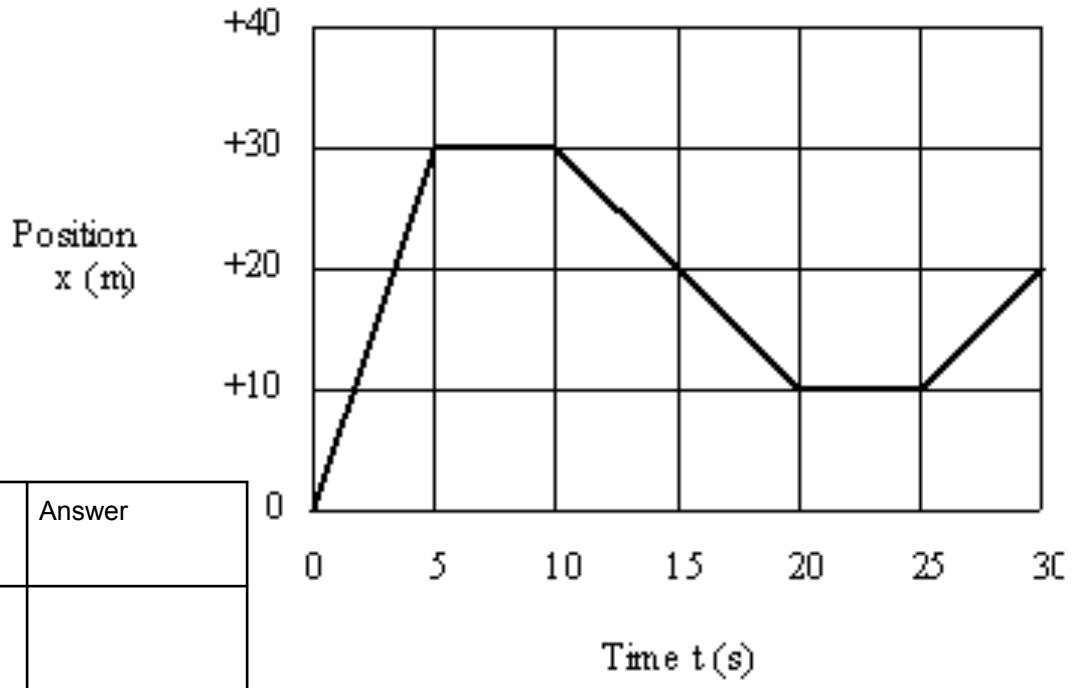
_____



Try one on your own continued:

Distance:

Displacement:



Given	Equation	Work	Answer